

**IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE**

PATENT

Applicant(s):	Misuo Sugiyama; Hatsuyuki Arai	Docket No.:	30598.0004
Reissue of Patent No.:	5,605,499	Application No.:	08/421,706
Issued:	February 25, 1997	Filed:	April 13, 1995
Title:	FLATTENING METHOD AND FLATTENING APPARATUS OF A SEMICONDUCTOR DEVICE	Examiner:	Andrew Weinberg

REISSUE DECLARATION OF STEWART WOMACK (37 CFR 1.175)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, **STEWART WOMACK**, hereby declare as follows:

1. My residence, post office address and citizenship are as stated below next to my name.
2. I act as in-house patent counsel for SpeedFam Corporation. SpeedFam Corporation is the sister corporation in the United States of SpeedFam Company Limited, the assignee of U.S. patent no. 5,605,499 for which reissue is sought. My duties include ongoing review and supervision of patent applications prosecuted on behalf of SpeedFam Company Limited, as well as of patents issued to SpeedFam Company Limited, including the captioned U.S. patent no. 5,605,499.

3. I have reviewed and understand the contents of the captioned reissue application, including the claims as amended by the enclosed Preliminary Amendment.

4. I verily believe that the original patent, namely, U.S. patent no. 5,605,499, is wholly or partly inoperative or invalid by reason of the applicants claiming less than they had a right to claim in the patent.

5. The errors in, and insufficiency of, the originally issued claims relate to the existence of an unnecessary limitation in claims 1, 6, and 11 that the tool (claims 1 and 6) or tool arm (claim 11) for conditioning (*i.e.*, for forming the "fluff" on) the polishing pad be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." As described in the specification, and as one skilled in the art will appreciate, this directional limitation for movement of the conditioning tool is not necessary. Any movement of the tool which effects conditioning of the polishing cloth will suffice. Accordingly, this limitation unnecessarily limits claims 1, 6 and 11.

6. The errors specified in paragraph 5 above occurred during prosecution of the patent application which matured into U.S. patent no. 5,605,499. Specifically, the errors occurred in an amendment dated May 17, 1996, which was filed in response to an Office Action dated February 26, 1996. That office action rejected claims 1, 9 and 15 of the application (renumbered as claims 1, 6 and 11 upon allowance) as being unpatentable as obvious over U.S. patent no. 5,154,021 to Bombardier *et al.* in view of Japanese patent document no. JP-358702. The error giving rise to this application for reissue occurred in the May 17, 1996 amendment filed in response to the Office Action when claims 1, 6 and 11 were amended to include the limitation that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." This limitation was clearly not necessary to distinguish over the applied references and, consequently, the applicants claimed less than they had a right to claim in the patent.

7. At the time the amendment was filed, I was not yet employed by SpeedFam Corporation and consequently did not have an opportunity to review the application or amendment prior to their filing. After having now reviewed the specification, claims and prosecution history, however, it is clear that it was not appreciated what amended claims 1, 6 and 11 covered and what the claims did not cover. Specifically, it was not appreciated that the meaning of the limitation added to claims 1, 6 and 11 requiring that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction."

8. It is also clear from my review of the application and claims as amended by the May 17 amendment, that claims 1, 6 and 11 could have been presented more broadly and that the added limitations were in fact unnecessary for patentability over the prior art, and resulted in issuance of a patent claiming less than the applicants had a right to claim.

9. The errors described in paragraphs 5-8 above came to my attention as a result of discussions with the named inventors in this application and as a result of guidance received from attorney Troy Schmelzer of the law firm of Snell & Wilmer, new outside patent counsel for SpeedFam Corporation and SpeedFam Company Limited. These discussions and guidance, which occurred between June 1997 and the present date, led me to realize that claims 1, 6, and 11 were drafted too narrowly and that the limitations discussed above were unnecessary for patentability over the art of record.

10. I understand each of the recited errors in originally issued claims 1, 6 and 11 and agree that the applicants claimed less than they had a right to claim in the original patent. Because I was not and could not have been aware that claims 1, 6, and 11 when amended on May 17, 1997 were unnecessarily narrow, these errors arose without any deceptive intention on my part.

11. The erroneous and unnecessary limitations present in issued claims 1, 6 and 11 are removed from the claims by the Preliminary Amendment filed herewith. The amendments to claims 1, 6 and 11 are fully supported in the original patent specification (column 9, lines 61-67) and hence, add no new matter to the patent.

12. I acknowledge the duty to disclose to the United States Patent Office all information known to me to be material to patentability in accordance with 37 C.F.R. §1.56.

13. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature:

Stewart J. Womack
STEWART WOMACK

Date:

9-19-97

Citizenship: **United States**

City of Residence: Scottsdale

Country of Residence: **United States**

Post Office Address: 5201 E Evans
Scottsdale, AZ 85254

Please send all further correspondence to Snell & Wilmer L.L.P. at the following address:

SNELL & WILMER L.L.P.
One Arizona Center
Phoenix, Arizona 85004-0001
ATTENTION: Troy M. Schmelzer

Tel. (602) 382-6241
Fax (602) 382-6070

266201-12409680

IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE

PATENT

Applicant(s): Misuo Sugiyama; Hatsuyuki Arai

Docket No.: 30598.0004

Reissue of 5,605,499
Patent No.:

Application No.: 08/421,706

Issued: February 25, 1997

Filed: April 13, 1995

Title: FLATTENING METHOD AND
FLATTENING APPARATUS OF A
SEMICONDUCTOR DEVICE

Examiner: Andrew Weinberg

REISSUE DECLARATION OF MISUO SUGIYAMA (37 CFR 1.175)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, MISUO SUGIYAMA, hereby declare as follows:

1. My residence, post office address and citizenship are as stated below next to my name.
2. I believe that I am an original, first, and joint inventor of the invention described and claimed in U.S. patent no. 5,605,499 which issued on February 25, 1997, and in the reissue application filed herewith, including in the Preliminary Amendment, and for which invention a reissue of U.S. patent no. 5,605,499 is solicited.
3. I have reviewed and understand the contents of the captioned reissue application, including the claims as amended by the enclosed Preliminary Amendment.

4. I verily believe that the original patent, namely, U.S. patent no. 5,605,499, is wholly or partly inoperative or invalid by reason of our claiming less than we had a right to claim in the patent.

5. The errors in, and insufficiency of, the originally issued claims relate to the existence of an unnecessary limitation in claims 1, 6, and 11 that the tool (claims 1 and 6) or tool arm (claim 11) for conditioning (*i.e.*, for forming the "fluff" on) the polishing pad be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." As described in the specification, and as one skilled in the art will appreciate, this directional limitation for movement of the conditioning tool is not necessary. Any movement of the tool which effects conditioning of the polishing cloth will suffice. Accordingly, this limitation unnecessarily limits claims 1, 6 and 11.

6. The errors specified in paragraph 5 above occurred during prosecution of the patent application which matured into U.S. patent no. 5,605,499. Specifically, the errors occurred in an amendment dated May 17, 1996, which was filed in response to an Office Action dated February 26, 1996. That office action rejected claims 1, 9 and 15 of the application (renumbered as claims 1, 6 and 11 upon allowance) as being unpatentable as obvious over U.S. patent no. 5,154,021 to Bombardier *et al.* in view of Japanese patent document no. JP-358702. The error giving rise to this application for reissue occurred in the May 17, 1996 amendment filed in response to the Office Action when claims 1, 6 and 11 were amended to include the limitation that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." This limitation was clearly not necessary to distinguish over the applied references and, consequently, we claimed less than we had a right to claim in the patent.

7. The errors described in paragraph 6 above arose on or about May 17, 1996, the date of filing of the amendment to the claims which added the unnecessary limitation, as follows. At the time the amendment was filed, I read and understood the specification and claims, but did not appreciate what amended claims 1, 6 and 11 covered and what the claims did not cover. Specifically, I did not fully appreciate the meaning of the limitation added to claims 1, 6 and 11 requiring that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction."

8. I also did not realize, after discussions with our former patent counsel and my review of the application and claims prior to the filing of the May 17 amendment, that claims 1, 6 and 11

could have been presented more broadly and that the added limitations were in fact unnecessary for patentability over the prior art, and would result in issuance of a patent claiming less than we had a right to claim.

9. As a result of discussions with attorney Stewart Womack, in-house patent counsel for SpeedFam Corporation, and with guidance from attorney Troy Schmelzer of the law firm of Snell & Wilmer, new outside patent counsel for SpeedFam Corporation and SpeedFam Company Limited, which discussions occurred between June 1997 and the present date, I now realize that claims 1, 6, and 11 were drafted too narrowly and that the limitations discussed above were unnecessary for patentability over the art of record.

10. I understand each of the recited errors in originally issued claims 1, 6 and 11 and agree that we claimed less than we had a right to claim in the original patent. Because I was not aware that claims 1, 6, and 11 as amended on May 17, 1997 were unnecessarily narrow, these errors arose without any deceptive intention on my part.

11. The erroneous and unnecessary limitations present in issued claims 1, 6 and 11 are removed from the claims by the Preliminary Amendment filed herewith. The amendments to claims 1, 6 and 11 are fully supported in the original patent specification (column 9, lines 61-67) and hence, add no new matter to the patent.

12. I acknowledge the duty to disclose to the United States Patent Office all information known to me to be material to patentability in accordance with 37 C.F.R. §1.56.

13. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature: Misuo Sugiyama
MISUO SUGIYAMA

Date: Sep. 22, 1997.

Citizenship: JAPAN

City of Residence: Ayase-shi

Country of Residence: JAPAN

JR

Post Office Address: c/o Speedfam Company Limited
2647, Hayakawa, Ayase-shi, Kanagawa

Please send all further correspondence to Snell & Wilmer L.L.P. at the following address:

SNELL & WILMER L.L.P.
One Arizona Center
Phoenix, Arizona 85004-0001
ATTENTION: Troy M. Schmelzer

Tel. (602) 382-6241
Fax (602) 382-6070

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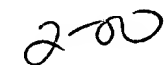
PATENT

Applicant(s):	Misuo Sugiyama; Hatsuyuki Arai	Docket No.:	30598.0004
Reissue of Patent No.:	5,605,499	Application No.:	08/421,706
Issued:	February 25, 1997	Filed:	April 13, 1995
Title:	FLATTENING METHOD AND FLATTENING APPARATUS OF A SEMICONDUCTOR DEVICE	Examiner:	Andrew Weinberg

REISSUE DECLARATION OF HATSUYUKI ARAI (37 CFR 1.175)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:



I, **HATSUYUKI ARAI**, hereby declare as follows:

1. My residence, post office address and citizenship are as stated below next to my name.
2. I believe that I am an original, first, and joint inventor of the invention described and claimed in U.S. patent no. 5,605,499 which issued on February 25, 1997, and in the reissue application filed herewith, including in the Preliminary Amendment, and for which invention a reissue of U.S. patent no. 5,605,499 is solicited.
3. I have reviewed and understand the contents of the captioned reissue application, including the claims as amended by the enclosed Preliminary Amendment.

4. I verily believe that the original patent, namely, U.S. patent no. 5,605,499, is wholly or partly inoperative or invalid by reason of our claiming less than we had a right to claim in the patent.

5. The errors in, and insufficiency of, the originally issued claims relate to the existence of an unnecessary limitation in claims 1, 6, and 11 that the tool (claims 1 and 6) or tool arm (claim 11) for conditioning (*i.e.*, for forming the "fluff" on) the polishing pad be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." As described in the specification, and as one skilled in the art will appreciate, this directional limitation for movement of the conditioning tool is not necessary. Any movement of the tool which effects conditioning of the polishing cloth will suffice. Accordingly, this limitation unnecessarily limits claims 1, 6 and 11.

6. The errors specified in paragraph 5 above occurred during prosecution of the patent application which matured into U.S. patent no. 5,605,499. Specifically, the errors occurred in an amendment dated May 17, 1996, which was filed in response to an Office Action dated February 26, 1996. That office action rejected claims 1, 9 and 15 of the application (renumbered as claims 1, 6 and 11 upon allowance) as being unpatentable as obvious over U.S. patent no. 5,154,021 to Bombardier *et al.* in view of Japanese patent document no. JP-358702. The error giving rise to this application for reissue occurred in the May 17, 1996 amendment filed in response to the Office Action when claims 1, 6 and 11 were amended to include the limitation that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." This limitation was clearly not necessary to distinguish over the applied references and, consequently, we claimed less than we had a right to claim in the patent.

7. The errors described in paragraph 6 above arose on or about May 17, 1996, the date of filing of the amendment to the claims which added the unnecessary limitation, as follows. At the time the amendment was filed, I read and understood the specification and claims, but did not appreciate what amended claims 1, 6 and 11 covered and what the claims did not cover. Specifically, I did not fully appreciate the meaning of the limitation added to claims 1, 6 and 11 requiring that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction."

8. I also did not realize, after discussions with our former patent counsel and my review of the application and claims prior to the filing of the May 17 amendment, that claims 1, 6 and 11

could have been presented more broadly and that the added limitations were in fact unnecessary for patentability over the prior art, and would result in issuance of a patent claiming less than we had a right to claim.

9. As a result of discussions with attorney Stewart Womack, in-house patent counsel for SpeedFam Corporation, and with guidance from attorney Troy Schmelzer of the law firm of Snell & Wilmer, new outside patent counsel for SpeedFam Corporation and SpeedFam Company Limited, which discussions occurred between June 1997 and the present date, I now realize that claims 1, 6, and 11 were drafted too narrowly and that the limitations discussed above were unnecessary for patentability over the art of record.

10. I understand each of the recited errors in originally issued claims 1, 6 and 11 and agree that we claimed less than we had a right to claim in the original patent. Because I was not aware that claims 1, 6, and 11 as amended on May 17, 1997 were unnecessarily narrow, these errors arose without any deceptive intention on my part.

11. The erroneous and unnecessary limitations present in issued claims 1, 6 and 11 are removed from the claims by the Preliminary Amendment filed herewith. The amendments to claims 1, 6 and 11 are fully supported in the original patent specification (column 9, lines 61-67) and hence, add no new matter to the patent.

12. I acknowledge the duty to disclose to the United States Patent Office all information known to me to be material to patentability in accordance with 37 C.F.R. §1.56.

13. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature:


HATSUYUKI ARAI

Date:

sep 22, 1997

Citizenship: JAPAN

City of Residence: Ayase-shi

Country of Residence: JAPAN

JAX

Post Office Address: c/o Speedfam Company Limited
2647, Hayakawa, Ayase-shi, Kanagawa

Please send all further correspondence to Snell & Wilmer L.L.P. at the following address:

SNELL & WILMER L.L.P.

One Arizona Center

Phoenix, Arizona 85004-0001

ATTENTION: Troy M. Schmelzer

Tel. (602) 382-6241

Fax (602) 382-6070

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IN THE UNITED STATES PATENT AND
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PATENT

Applicant(s): Misuo Sugiyama; Hatsuyuki Arai

Docket No.: 30598.0004

Reissue of 5,605,499
Patent No.:

Application No.: 08/421,706

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Title: FLATTENING METHOD AND
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SEMICONDUCTOR DEVICE

Examiner: Andrew Weinberg

REISSUE DECLARATION OF TROY SCHMELZER (37 CFR 1.175)

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, **TROY SCHMELZER**, hereby declare as follows:

1. My residence, post office address and citizenship are as stated below next to my name.
2. I act as outside patent counsel for SpeedFam Company Limited, the assignee of U.S. patent no. 5,605,499 for which reissue is sought, as well as for SpeedFam Corporation, which is the sister corporation in the United States of SpeedFam Company Limited. My duties include ongoing review and supervision of patent applications prosecuted on behalf of SpeedFam Company Limited, as well as of patents issued to SpeedFam Company Limited, including the captioned U.S. patent no. 5,605,499.

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3. I have reviewed and understand the contents of the captioned reissue application, including the claims as amended by the enclosed Preliminary Amendment.

4. I verily believe that the original patent, namely, U.S. patent no. 5,605,499, is wholly or partly inoperative or invalid by reason of the applicants claiming less than they had a right to claim in the patent.

5. The errors in, and insufficiency of, the originally issued claims relate to the existence of an unnecessary limitation in claims 1, 6, and 11 that the tool (claims 1 and 6) or tool arm (claim 11) for conditioning (*i.e.*, for forming the "fluff" on) the polishing pad be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." As described in the specification, and as one skilled in the art will appreciate, this directional limitation for movement of the conditioning tool is not necessary. Any movement of the tool which effects conditioning of the polishing cloth will suffice. Accordingly, this limitation unnecessarily limits claims 1, 6 and 11.

6. The errors specified in paragraph 5 above occurred during prosecution of the patent application which matured into U.S. patent no. 5,605,499. Specifically, the errors occurred in an amendment dated May 17, 1996, which was filed in response to an Office Action dated February 26, 1996. That office action rejected claims 1, 9 and 15 of the application (renumbered as claims 1, 6 and 11 upon allowance) as being unpatentable as obvious over U.S. patent no. 5,154,021 to Bombardier *et al.* in view of Japanese patent document no. JP-358702. The error giving rise to this application for reissue occurred in the May 17, 1996 amendment filed in response to the Office Action when claims 1, 6 and 11 were amended to include the limitation that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction." This limitation was clearly not necessary to distinguish over the applied references and, consequently, the applicants claimed less than they had a right to claim in the patent.

7. At the time the amendment was filed, I had not yet been retained by SpeedFam Company Limited and consequently did not have an opportunity to review the application or amendment prior to their filing. After having now reviewed the specification, claims and prosecution history in full detail, however, it is clear that it was not appreciated what amended claims 1, 6 and 11 covered and what the claims did not cover. Specifically, it was not appreciated that the meaning of the limitation added to claims 1, 6 and 11 requiring that the tool or tool arm be "moved along a radial direction of the polishing cloth and perpendicular to the radial direction."

8. It is also clear from my review of the application and claims as amended by the May 17 amendment, that claims 1, 6 and 11 could have been presented more broadly and that the added limitations were in fact unnecessary for patentability over the prior art, and resulted in issuance of a patent claiming less than the applicants had a right to claim.

9. The errors described in paragraphs 5-8 above came to my attention while conducting a detailed review of the prosecution history of, and references cited against, the captioned application during June of 1997. As a result of this review, and subsequent discussions with Stewart Womack, in-house patent counsel for SpeedFam Corporation, I have concluded that claims 1, 6, and 11 were drafted too narrowly and that the limitations discussed above were unnecessary for patentability over the art of record.

10. I understand each of the recited errors in originally issued claims 1, 6 and 11 and agree that the applicants claimed less than they had a right to claim in the original patent. Because I was not and could not have been aware that claims 1, 6, and 11 when amended on May 17, 1997 were unnecessarily narrow, these errors arose without any deceptive intention on my part.

11. The erroneous and unnecessary limitations present in issued claims 1, 6 and 11 are removed from the claims by the Preliminary Amendment filed herewith. The amendments to claims 1, 6 and 11 are fully supported in the original patent specification (column 9, lines 61-67) and hence, add no new matter to the patent.

12. I acknowledge the duty to disclose to the United States Patent Office all information known to me to be material to patentability in accordance with 37 C.F.R. §1.56.

13. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signature:


TROY SCHMELZER

Date:

10/28/97

Citizenship: **United States**

City of Residence: Scottsdale, AZ

Country of Residence: **United States**

Post Office Address: 16356 N. Thompson Peak Pkwy. #1092
Scottsdale, AZ 85260

Please send all further correspondence to Snell & Wilmer L.L.P. at the following address:

SNELL & WILMER L.L.P.
One Arizona Center
Phoenix, Arizona 85004-0001
ATTENTION: Troy M. Schmelzer

Tel. (602) 382-6241
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